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MICHAEL P. MAZZA, LLC
686 CRESCENT BLVD.
GLEN ELYN, IL 60137

EXAMINER	
CRABTREE, JOSHUA DAVID	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/731,619	KENNEN ET AL.	
	Examiner	Art Unit	
	Joshua D. Crabtree	3715	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2003 and 02 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/2/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 19, 20-22, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Swensen et al. (US 2004/0014010).

With regard to claim 19, and the limitation of an archery bow having a bow string suitable for launching an arrow, Swensen et al. disclose this feature (Fig. 1; Paragraph [0028]). With regard to the limitation of a momentum suppression rod, a cavity and a piston moveable within the cavity, the piston being capable of providing back-pressure to the bow string upon release of the drawn string commensurate to that which an arrow imparts when actually fired from the bow, Swensen et al. disclose this feature (Paragraph [0028 - 0029]).

With regard to claim 20, and the limitation wherein the momentum suppression rod has first and second ends, the first end being connected to the archery bow and the second end being connected to the bow string, Garthe et al. disclose this feature (See Figs. 3-4).

With regard to claim 21, and the limitation wherein the momentum suppression rod is mechanically actuated and comprises a friction rod, Swensen et al. disclose this feature (Fig. 3B; Paragraph [0039]).

With regard to claim 22, and the limitation wherein the momentum suppression rod is hydraulically and/or pneumatically actuated, Swensen et al. disclose that the rod is pneumatically actuated (Paragraph [0028]).

With regard to claim 34, and the limitation wherein the second end of the momentum suppression rod extends toward the bow string in a direction generally normal to the bow string along a centerline of travel of he bow string, Swensen et al. disclose this feature (See Fig. 3A).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 1, 3-5, 7, 8, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Richardson et al. (US 2005/0023763). Golubic disclose a simulated hunting application (Col. 2: 11-31).

With regard to claims 1 and 38, and the limitation of a hunting instrument capable of firing a projectile, Golubic discloses this feature (See Fig. 1; Col. 1: 10-17).

With regard to the limitation of a data-capturing unit comprising a camera for capturing image data, Golubic discloses this feature (Item 16 in Figs. 1 and 8; Col. 6: 37-43; Col. 9: 1-12).

With regard to the limitation of a display screen for displaying the image data, Golubic discloses this feature (Fig. 6; Col. 2: 42-50; Col. 3: 18-22). With regard to a range finder for determining distance to a target, Golubic discloses this feature (Col. 3: 5-10; Item 32 in Fig. 3; Col. 4: 56-68).

With regard to the limitation of a recording unit for storing the data captured by the data capture unit and the variable data, Golubic discloses that the microprocessor stores the user-entered parameter data (Col. 6: 10-14), and that images captured are recorded on a display/recording unit (Col. 3: 33-41).

With regard to the limitation of image editing software, configured to allow display of at least portions of the flight path of the projectile based at least in part on the calculations performed by the trajectory calculating software, so that the flight path of

the projectile may be viewed on the display screen and an impact point on or near the target may also be viewed, Golubic discloses that the display is capable of displaying an impact point along with the images developed by the range finder (Items 62 and 63 in Fig. 6; Col. 7: 62 - Col. 8: 26). Golubic discloses that the display of the impact point results from computation of the trajectory (Col. 2: 42-50).

With regard to the limitation of trajectory calculating software capable of calculating the flight path and impact point of the projectile based on variable data entered by a user, Golubic discloses a trajectory calculating microprocessor unit, which calculates trajectory based on sensor data and user-entered parameter data (Fig. 5; Col. 5: 14-26; Col. 5: 63 - Col. 6: 27; Block 803 in Fig. 8). Golubic does not disclose displaying a flight path of the projectile. Richardson et al. teach a sports simulation system which displays a simulated launched projectile following a calculated trajectory (Paragraph [0014]). Richardson et al. discloses an archery simulator to be in the related field of the invention (Paragraphs [0005 - 0006]). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Richardson et al. into the invention of Golubic in order to provide the user with the ability to switch between images, one of them being a simulated launched projectile.

With regard to claim 2, Golubic does not disclose using a bow and arrow. Richardson teaches using a bow and arrow in a hunting simulation (Paragraphs [0005 - 0006]). It would have been obvious to one of ordinary skill in the art at the time of

invention to incorporate the teaching of Richardson et al. into the invention of Golubic in order to provide a hunting simulation using bow and arrows.

With regard to claim 3, and the limitation wherein the hunting instrument comprises a gun and the projectile comprises a bullet or pellets, Golubic discloses this feature (Col. 2: 33-41).

With regard to claim 4, and the limitation wherein the image data comprises video data, and the image editing software comprises video editing software capable of generating frame inlays from portions of the flight path of the projectile and incorporating the frame inlays into the video data based on the calculations performed by the trajectory calculating software program, and displaying edited frames on the display screen, Golubic discloses deriving the impact point based on the trajectory calculations, and displaying the target image with the impact point superimposed over the image presented to the operator (Col. 7: 46-61). Golubic discloses image data comprising video data (Col. 6: 37-43).

With regard to claim 5, and the limitation wherein the image editing software and the trajectory calculating software enable display of a site zero impact location on the screen, Golubic discloses the display of a impact-point reticle which indicates where the projectile discharged from the rifle will impact relative to the zero-range reticle (Col. 2: 36-41; Col. 5: 27-27).

With regard to claim 7, and the limitation wherein the image editing software and the trajectory calculating software enable display on the display screen of images

adjacent an intended target and interplay between such images and the projectile, Golubic discloses the feature of switching between display modes (Col. 4: 37-55). Golubic does not disclose that one of the images displayed is that of the projectile. Richardson et al. teach this feature, as described above.

With regard to claim 8, and the limitation wherein the image editing software and the trajectory calculating software provide the user with shot result information, Golubic discloses that a second image can be recorded at the time of impact, and a comparison of the images can indicate the success in target acquisition (Col. 3: 38-41; Col. 5: 59-62; Col. 7: 62 - Col. 8: 26). Additionally, Golubic discloses that the display is capable of displaying an impact point along with the images developed by the range finder (Items 62 and 63 in Fig. 6; Col. 7: 62 - Col. 8: 26).

3. Claims 18 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Richardson et al. (US 2005/0023763), as applied above, and further in view of Smith et al. (US 4,494,198). Golubic disclose a simulated hunting application (Col. 2: 11-31).

With regard to claims 18 and 39, and the limitation wherein a pre-shot adjustment is made by firing an initial, simulated shot, estimating one or more shot parameters based on analysis of the initial, simulated shot and its corresponding flight path, and adjusting one or more of the shot parameters prior to firing of the next simulated shot at the same intended target, Golubic discloses zoom knob to control a zoom lens, and a focus knob that the user can manipulate to adjust a range

determination unit (Col. 4: 43-55). Golubic disclose that the user can use the aforementioned knobs to manually enter signals to the trajectory calculator (Col. 5: 63 - Col 6: 27). Golubic also discloses that the user can observe the effects of changing the parameters, on the screen (Col. 7: 10-12). Golubic also discloses a mode of operation in which the impact point is not displayed until after the trigger mechanism has been activated, thus allowing comparison against the result determined by the trajectory calculator (Col. 7: 57-61). The aforementioned citations are meant to illustrate that the invention of Golubic is capable of being used in the manner specified in the claim. However, Golubic, as modified by Richardson et al., does not specifically disclose the steps wherein the user fires an initial shot, estimates parameters based on the initial shot and its corresponding flight path, and adjusts parameters prior to firing of the next shot. Smith et al. teach a gun fire control system, which includes a rangefinder (Col. 1: 4-7). Smith et al. teach that a user fires a first shot at a target, and assess the range-adjustment required to achieve a hit on the target, moves the gun to the adjusted ballistic range and fires again (Col. 4: 23-38). Smith et al. teach that this provides the advantage wherein the displayed ballistic range for all subsequent true range values will be of sufficient accuracy to provide a high probability of a hit with minimal need for adjustment by the operator (Col. 4: 34-37). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Smith et al. into the invention of Golubic, as modified by Richardson et al., in order to provide the aforementioned advantage.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Richardson et al., as applied above, and further in view of McGivern (US 2003/0101604).

With regard to claim 17, Golubic, as modified by Richardson et al., does not disclose the display comprising a liquid crystal display. McGivern teaches this feature. McGivern teaches that an LCD display is suitable for a low-power application (Col. 2: 32-59). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of McGivern into the invention of Golubic, as modified by Richardson et al., in order to provide a hunting simulator with an LCD display, suitable for a low power application.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Richardson et al., as applied above, and further in view of Edwards (US 6,871,439).

With regard to claim 6, Golubic, as modified by Richardson et al., does not disclose deriving the impact point using a predetermined algorithm indicating a change in pixel size given corresponding target distance changes. Edwards teaches a target actuated weapon which uses the aforementioned feature to derive the impact point, or *target centroid* (Col. 19: 32-49). Edwards teaches that this feature increases the likelihood of creating a casualty. It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Edwards into the invention of

Golubic, as modified by Richardson et al., in order to provide the aforementioned advantage.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Richardson et al., as applied above, and further in view of Kendir (US 2005/0153262).

With regard to claim 9, Golubic, as modified by Richardson et al., does not disclose the shot result information comprising whether or not the shot was a "kill" shot. Kendir teaches a firearm training system which notifies the user, via LED's, upon detection of a hit (Paragraph [0092], [0094]). Kendir also teaches that the system records shot result information, such as "kill shot" and "wounded shot", etc. (Paragraph [0135]). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Kendir into the invention of Golubic, as modified by Richardson et al., in order to provide a hunting simulator which records whether a shot was a "kill shot" or not.

7. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Richardson et al., as applied above, and further in view of LaBelle et al. (US 7,053,992).

With regard to claim 10, Golubic, as modified by Richardson et al., does not disclose the limitation wherein the image editing software and the trajectory calculating software provide the user with information concerning target speed at the time of the shot. LaBelle et al. teach a rangefinder which provides the user with the speed of the

target (Item 314 in Fig. 3; Col. 4: 58 - Col. 5: 3). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of LaBelle et al. into the invention of Golubic, as modified by Richardson et al., in order to provide a hunting simulator with which the user may view the speed of the target.

With regard to claim 12, Golubic discloses a range finder, as previously described. Golubic, as modified by Richardson et al., does not disclose using a laser range finder. LaBelle et al. teach a range finder which uses lasers. LaBelle et al. also teach that the laser rangefinder may be used in hunting, and may comprise a gun (Col. 3: 48-62). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of LaBelle et al. into the invention of Golubic, as modified by Richardson et al., in order to provide a hunting simulator using a laser rangefinder.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Richardson et al., as applied above, and further in view of Hawkes et al. (US 6,237,462).

With regard to claim 11, and the limitation wherein the data capture unit further comprises a microphone for capturing audio data corresponding to the captured image and range-finding data, Golubic discloses that the camera used may be a commercially available video recorder/camera unit (Col. 9: 1-19). Although such units are known to have audio recording capabilities, Golubic, as modified by Richardson et al., does not explicitly disclose the inclusion of a microphone for audio recording. Hawkes et al.

teach a portable aiming system which may include a directional microphone (Col. 6: 4-10). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Hawkes et al. into the invention of Golubic, as modified by Richardson et al., in order to provide a hunting simulator which uses a microphone to record the audio emitted from the target.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Richardson et al., as applied above, and further in view of Sammut et al. (US 2005/0021282).

With regard to claim 13, Golubic, as modified by Richardson et al., does not disclose using a clinometer to increase shot accuracy by accounting for slope or tilt angle of the hunting instrument relative to the intended target. Sammut et al. teach a method and apparatus for calculating aiming point information, which may include a clinometer for measuring angles between the barrel and the horizontal axis (Paragraph [0182]). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Sammut et al. into the invention of Golubic, as modified by Richardson et al., in order to provide a hunting simulator with which the user can measure the uphill or downhill slope angle with a clinometer.

10. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Richardson et al., as applied above, and further in view of Giry et al. (US 5,675,112).

With regard to claim 14, Golubic, as modified by Richardson et al., does not disclose the limitation wherein the image data may be transmitted from the data capture unit to an electrical apparatus such as a computer or PDA. Giry et al. teach an aiming device for weapons, which includes a computer receiving digitized information from the cameras, one of which is mounted to the gun Giry et al. teach that this feature allows the computer to provide symbology, such as a real-time depiction axis of fire of the weapon (Item 83 in Fig. 5; Col. 3: 5-23). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Giry et al. into the invention of Golubic, as modified by Richardson et al., in order to provide a hunting simulator in which the image data is transmitted to a computer.

With regard to claim 15, and the limitation wherein the flight path of the projectile and the impact point of the intended target may be viewed on the display screen without first having to download the image data to the computer, Golubic discloses that the user may view the flight path and impact point on the display screen (Col. 6: 61 - Col. 7: 61). The invention of Golubic, as modified by Richardson et al., does not require downloading the image data to a computer at all. Therefore, it follows that the invention of Golubic allows for viewing of an image that has not been downloaded to a computer.

With regard to claim 16, and the limitation wherein the display screen is enabled to provide multi-shot displays corresponding to a plurality of projectiles, Golubic

discloses that the display unit can record multiple impact points on a stored field of view images (Col. 2: 57-61; See also claim 8).

11. Claims 23, 26, 28, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swensen et al. (US 2004/0014010) in view of Garth et al. (US 6,513,511).

With regard to claim 23, Swensen et al. do not disclose the limitation wherein the cavity comprises a cavity wall and inner and outer chambers separated by a displacement valve, the inner chamber housing the piston, and the outer chamber including the first and second compartments, the first compartment containing a compressed gas and the second compartment containing a liquid, Garthe et al. teach a bow pre-loading apparatus and method which includes the aforementioned feature. With regard to claims 26 and 27, and the limitations wherein the liquid comprises a low viscosity oil, and the compressed gas is nitrogen gas, Garthe et al. teach this feature (Col. 2: 51-67). Garthe et al. teach that this feature provides added safety (Col. 1: 40-43). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Garthe et al. into the invention of Swenson et al. to provide added safety.

With regard to claim 28, Swensen et al. do not disclose the limitation wherein the piston, outer chambers, and the cavity wall are machined to substantially minimize rod flex and distortion. Garthe et al. teach that the invention is rugged (Col. 1: 43-47). It would have been obvious to one of ordinary skill in the art at the time of invention to

incorporate the teaching of Garthe et al. into the invention of Swenson et al. to provide a momentum suppression device which is sturdy such that deformation is less likely.

With regard to claim 35, Swensen et al. do not disclose the limitation wherein release of the drawn bowstring causes the piston to reenter the inner chamber and forces the liquid back through the displacement valve and into the outer chamber, Garthe et al. teach this feature (Col. 2: 51 - Col. 3: 7). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Garthe et al. into the invention of Swenson et al. for the same reason as described above, as this feature is also part of the rod and piston system described above.

With regard to claim 36, Swensen et al. do disclose the limitation wherein the release of the drawn bow string causes the piston to reenter the inner chamber and recompress the gas, thereby supplying sufficient back-pressure on the bow string to sufficiently reduce shock and vibration on the bow necessary to avoid damage to the bow or injury to the user. Garthe et al. teach this feature (Col. 2: 51 - Col. 3: 7). Garthe et al. teach this feature (Col. 2: 51-67). Garthe et al. teach that this feature provides added safety (Col. 1: 40-43). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Garthe et al. into the invention of Swenson et al. to provide the aforementioned advantage.

12. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swensen et al. (US 2004/0014010) in view of Garth et al. (US 6,513,511), as applied above, and further in view of Nibecker, Jr. (US 6,701,908). Swensen et al., as modified by Garthe et

al., do not disclose the displacement valve being adjustable from the outside of the momentum suppression rod to allow varying rates of rod release and back-pressure. Nibecker, Jr. teaches an air gun comprising a piston and cylinder assembly in which the pressure relief valve is adjustable (Col. 2: 55 - Col. 3: 47; Item 133 in Fig. 5). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Nibecker, Jr. into the invention of Swensen et al., as modified by Garthe et al. in order to provide the user with the ability to adjust the pressure inside the momentum suppression mechanism.

13. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swensen et al. (US 2004/0014010) in view of Bergstrom (US 6,901,689).

With regard to claims 29 and 30, Swensen et al. do not disclose the limitation wherein the piston is a multistage piston capable of extending in multiple portions, and having inner and outer extension limiters which engage outer extension limiters at each stage of extension of the piston, thereby allowing each progressive piston portion of the multistage piston to extend when the previous portion has substantially reached its maximum extension point. Bergstrom teaches a piston-rod assembly which may employ compound telescopic configurations (Col. 5: 30-43; Col. 13: 56 - Col. 14: 10; Figs. 7A-B). Bergstrom teaches that this configuration is particularly useful in apparatuses where longitudinal space is small, relative to the distance through the force is required to travel (Col. 13: 56-61). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Bergstrom into the invention of

Swensen et al. in order to provide a momentum suppression mechanism which allows more force to be dissipated in a smaller length device.

14. Claims 25 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swensen et al. (US 2004/0014010) in view of Golubic (US 5,026,158), and further in view of Richardson et al.

With regard to claim 25, the limitation of a data-capturing unit comprising a camera for capturing image data, Golubic teaches this feature (Item 16 in Figs. 1 and 8; Col. 6: 37-43; Col. 9: 1-12).

With regard to the limitation of a display screen for displaying the image data, Swensen et al. disclose this feature (Paragraph [0029]). Swensen et al. do not disclose a range finder for determining distance to a target, Golubic teaches this feature (Col. 3: 5-10; Item 32 in Fig. 3; Col. 4: 56-68).

Swensen et al. do not disclose trajectory calculating software capable of calculating the flight path and impact point of the projectile based on variable data entered by a user, Golubic teaches a trajectory calculating microprocessor unit, which calculates trajectory based on sensor data and user-entered parameter data (Fig. 5; Col. 5: 14-26; Col. 5: 63 - Col. 6: 27; Block 803 in Fig. 8).

Swensen et al. do not disclose the limitation of a recording unit for storing the data captured by the data capture unit and the variable data, Golubic teaches that the microprocessor stores the user-entered parameter data (Col. 6: 10-14), and that images captured are recorded on a display/recording unit (Col. 3: 33-41).

Swensen et al. do not disclose image editing software, configured to allow display of at least portions of the flight path of the projectile based at least in part on the calculations performed by the trajectory calculating software, so that the flight path of the projectile may be viewed on the display screen and an impact point on or near the target may also be viewed, Golubic teaches that the display is capable of displaying an impact point along with the images developed by the range finder (Items 62 and 63 in Fig. 6; Col. 7: 62 - Col. 8: 26). Golubic teaches that the display of the impact point results from computation of the trajectory (Col. 2: 42-50).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the aforementioned teachings of Golubic into the invention of Swenson et al. in order to provide an archery simulation system with the additional features of trajectory calculation, video recording and editing, range finding, etc. Both inventions are concerned primarily with hunting simulation, therefore the aforementioned features of Golubic would be beneficial in the invention of Swensen et al.

Swensen et al., as modified by Golubic, do not disclose displaying the flight path of the projectile. Richardson et al. teach a sports simulation system which displays a simulated launched projectile following a calculated trajectory (Paragraph [0014]). Richardson et al. discloses an archery simulator to be in the related field of the invention (Paragraphs [0005 - 0006]). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Richardson et al.

into the invention of Swensen et al., as modified by Golubic, in order to provide the user with the ability to switch between images, one of them being a simulated launched projectile.

With regard to Claim 31, Swensen et al. do not disclose a charge coupled device camera. Golubic teaches this feature (Col. 3: 3-10). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Golubic into the invention of Swensen et al. in order to provide a hunting simulator with a charge coupled device camera.

15. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swensen et al. in view of Tann (US 4,316,145). Swensen et al. do not disclose one or more proximity sensors in the cavity. Tann teaches a rod and piston assembly which uses proximity sensors to sense the position of the piston (Col. 2: 9-20). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Tann into the invention of Swensen et al. in order to provide an archery simulator with a piston and rod assembly which includes proximity sensors to sense the position of the piston.

16. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swensen et al. in view of Tann (US 4,316,145), as applied above, and further in view of Adcock (US 6,718,962). Swensen et al., as modified by Tann, do not disclose proximity sensors with reaction time between 0.2-0.9 milliseconds. Adcock teaches that arrows can travel with velocities of between 188 and 206 feet per second. For an arrow to traverse a length

of between one and two feet, it would take around 0.5 milliseconds. It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Adcock into the invention of Swensen et al., as modified by Tann in order to *calculate the necessary reaction time for the proximity sensors.

17. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Golubic in view of Eppenstein (US 2,040,171).

Swensen et al. do not disclose an altimeter. Eppenstein teaches an apparatus which combines a rangefinder and altimeter (Col. 3: 1-11). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Eppenstein into the invention of Swensen et al. in order to provide an archery simulation which includes an altimeter.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Treat, Jr. et al. (US 5,649,706) teaches a simulator which produces a virtual trajectory of an arrow.

Lougheed et al. (US 5,686,690) teach a weapons aiming system.

Humphreys (US 6,260,466) teaches a target aiming system.

Profeta et al. (US 5,379,676) teach a fire control system.

Hope (US 6,539,661) teaches an optical imaging device for firearm scope attachment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Crabtree whose telephone number is 571-272-8962. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert P. Olszewski can be reached on (571) 272-6788. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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JC
Joshua D. Crabtree
August 17, 2006

KATHLEEN MOSSER
PRIMARY EXAMINER